ROYAL ASTRONOMICAL SOCIETY.

VOL. X. *May* 10, 1850. No. 7

G. B. AIRY, Esq., President, in the Chair.

Sir R. I. Murchison, Belgrave Square, was balloted for and duly elected a Fellow of the Society.

The President read the following letter from Sir John Ross:—

"*London, 6th May*, 1850.

"Sir,—I am to request that you will be pleased to inform the President and Council of the Royal Astronomical Society that an expedition of discovery and research, under my direction, will sail from Loch Ryan on the 23d inst., to Baffin's Bay, and that I shall be happy to give every attention in my power to any wishes or instructions I may be honoured with from the Royal Astronomical Society.—I am, with truth and regard, Sir, your most obedient servant, JOHN ROSS.

"N.B.—Letters posted in London on the 21st inst., will reach me in time if addressed to me at 'Northwest Castle, Stranraer.'

"*To the Secretary of the Royal Astronomical Society.*"

The thanks of the meeting were returned to Sir John Ross for his obliging offer.

The President then made a statement to the following effect:—

After completing the lunar reductions, and before engaging in any theoretical investigation, Mr. Airy made inquiry whether any mathematician was pursuing the same subject, when it appeared that Professor Hansen had undertaken this most difficult and important problem under the patronage, and with the pecuniary assistance, of the late King of Denmark. The matter was considered to be in the most satisfactory hands, as respected the power of the analyst and the singular intelligence of the patron. Some communications from Professor Hansen to the Royal Astronomical Society have shown the zeal and success with which he has prosecuted his researches,* but the death of the King of Denmark, and the unfortunate political differences which have lately disturbed that kingdom, threatened

* See *Memoirs*, vol. xvi. p. 465, and *Monthly Notices*, vol. vii. p. 275.

an interruption of the means necessary to carry on the computations and make the results public. Under these circumstances, and feeling that a correct theory of the moon, which should represent the immense series of Greenwich lunar observations, was not only most desirable in itself, but intimately connected with the Royal Observatory* and our national interests, Mr. Airy applied to the Lords Commissioners of the Admiralty for the small sum required to enable Professor Hansen to complete his work: it is almost needless to add that this was immediately granted in the handsomest manner.

The President stated that he had received from Dr. Henderson (now of Greenbank, St. Helen's, Lancashire) a new set of numbers for the teeth of wheels in a train to convert revolutions in solar time into revolutions in sidereal time, to which probably nothing comparable in accuracy had ever been produced. Dr. Henderson's numbers given in a former communication were founded upon a value of the sidereal day, differing from that in the *Nautical Almanac* by a perfectly insignificant quantity. This apparent difference, however, had stimulated Dr. Henderson to attempt a new combination of wheels, and he had discovered the following:—

If a spindle revolving in 24 solar hours carry a wheel of 50 teeth, which works in a wheel of 30 teeth on the second spindle; and if the second spindle carry a wheel of 182 teeth, which works in a wheel of 211 teeth on the third spindle; and if the third spindle carry a wheel of 196 teeth, which works in a wheel of 281 teeth on the fourth spindle,—then the time of revolution of that fourth spindle, in mean solar seconds, will be

$$86164^{s}\cdot090603274.$$

The length of the sidereal day adopted in the *Nautical Almanac* is

$$86164^{s}\cdot0906.$$

It is evident that these numbers are practically identical, inasmuch as the figures are the same as far as it has been thought necessary to retain decimals in the *Nautical Almanac*. Dr. Henderson estimates the difference at 1 second in 855 years, but even this estimation is too great.

THE NEW PLANET PARTHENOPE.

Dr. Annibal de Gasparis, assistant at the Royal Observatory, Naples, in a letter to Sir John Herschel, announces his discovery

* The Royal Observatory of Greenwich was established for the express purpose of observing the moon, and rendering her motions useful to navigation; this object has been kept steadily in view for more than 150 years, and with complete ultimate success.

of a new planet on the 11th of May. He states that he had used his utmost endeavours to realise a "Parthenope" in the heavens, such being the name which had been suggested by Sir John Herschel on the occasion of the discovery of *Hygeia* in 1849. The planet shone as a star of the ninth magnitude.

Observations.

NAPLES. (Dr. A. de Gasparis.)

	Naples M.T. h m s	R.A. ° ′ ″	N.P.D. ° ′ ″
May 11	12 51 53·1	230 21 53·2	100 35 12·9
12	11 42 2·8	230 8 28·6	31 58·9
13	12 6 35·6	229 53 41·2	28 35·5
14	10 28 16·8	40 36·0	25 31·1
15	9 52 50·5	229 26 25·0	22 39·1
17	10 59 36·0	228 57 7	16 42
18	11 14 36·2	42 41·8	13 52·5
19	10 18 43·3	29 20·2	11 13·8
20	10 0 37·3	228 15 30·5	100 8 33·1

CAMBRIDGE. Northumberland Equatoreal. (Prof. Challis.)

1850.	Greenwich M.T. h m s	R.A. h m s	N.P.D. ° ′ ″	No. of Comps. R.A.	No. of Comps. N.P.D.	Star.
May 30	9 55 48·3	15 4 17·81	99 49 11·0	1	1	*a*
	11 20 54·7	14·53	7·5	2	1	*b*
June 1	11 14 58·1	15 2 41·69	99 46 46·2	10	10	*b*

On the Meridian.

June 1	10 22 10·7	15 2 43·50	99 46 50·3
2	17 30·5	1 59·10	45 53·8
3	12 50·9	1 15·26	45 9·4
4	10 8 12·5	15 0 32·64	44 30·8
7	9 54 27·7	14 58 35·24	43 28·7
8	9 49 55·5	14 57 58·89	99 43 22·0

Assumed Mean Places of the Stars, 1850·0.

	R.A. h m s	N.P.D. ° ′ ″	
a	15 9 24·98	99 56 42·2	Bessel xv. 160
b	15 7 58·09	100 2 17·6	— 132

The place of *b* was determined by two transit and two circle observations: that of *a* is taken from Weisse's catalogue.

LIVERPOOL. Equatoreal. (Mr. Hartnup.)

	Greenwich M.T.	R.A.	Log $\frac{p}{P}$	N.P.D.	Log $\frac{q}{P}$	Star of Comp.
1850.	h m s	h m s		° ′ ″		
June 2	10 23 49·9	15 1 58·76	−7·0243	99 45 59·26	−9·9488	β Libræ
	11 3 42·9	57·44	+7·7761	53·51	9·9483	—
3	11 44 56·6	15 1 12·66	8·1405	99 45 7·77	9·9458	—
	12 4 53·4	12·06	8·2324	5·53	9·9441	—
	12 24 50·4	11·56	+8·3054	5·14	−9·9421	—

The observations are corrected for refraction. The corrections to be applied for parallax in time and arc are represented by p and q. P is the equatoreal horizontal parallax.

The following is the assumed place of β *Libræ* derived from the Greenwich Twelve-year Catalogue :—

For January 1, 1850·0.

Mean R.A.	Mean N.P.D.
h m s	° ′ ″
15 8 56·50	98 49 33·08

LIVERPOOL. 20-foot Equatoreal. (Mr. Lassell.)

	Greenwich M.T.	R.A. ✱ − Planet.	N.P.D. Planet − ✱
1850.	h m s	s	″
May 31	12 46 57·58	22·73	....
	12 59 57·03	....	56·35

The star and planet of equal brightness, a good tenth magnitude.

The star may be thus identified :—

It precedes a by 1 m 22·0 s and is South of a 1 ′ 14·1 ″

It follows b in 0 m 11·2 s North b 9 ′ 19·5 ″

Approximate places of a and b, from Harding's Catalogue for 1800, accompanying the xv. hour of the Berlin Maps :—

		Mag.	R.A.	N.P.D.
			h m s	° ′
1800	a	9	15 2 26	99 33·9
	b	9	15 0 53	99 45·5

DURHAM. Equatoreal. (Prof. Chevallier and Mr. R. C. Carrington.)

	Greenwich M.T.	R.A.		N.P.D.	
1850.	h m s	h m s		° ′ ″	
June 1	12 50 39·2	15 2 38·44	+0·023 p	99 46 48·4	−0·882 p

Compared with Weisse xv. 45, eleven times in R.A. and four times in N.P.D.

REGENT'S PARK. (MM. Bishop and Hind.)

	Greenwich M.T.	R.A.	N.P.D.
1850.	h m s	h m s	° ′ ″
May 30	11 31 41	15 4 14·31	99 49 5·8
31	10 36 23	15 3 29·16	99 47 55·4

The planet appeared as bright as stars of the 9·10th magnitude. The above places depend on the position of No. 45, Hour xv. of Weisse's catalogue.

HAMBURG. (M. C. Rümker.)

	Hamburg M.T. h m s	R.A. ° ′ ″	N.P.D. ° ′ ″	
May 27	11 40 8·7	226 40 37·5	99 53 35·2	Equatoreal.
28	10 41 34·4	28 30·1	52 4·2	Mer. Circle.
29	36 49·6	16 15·0	50 30·6	——
30	32 6·1	226 4 18·4	49 15·0	——
31	27 23·1	225 52 32·5	47 59·0	——
June 1	22 41·6	41 6·5	46 52·8	——
2	18 0·1	29 55·8	45 58·2	——
3	10 13 22·2	225 19 7·9	99 45 12·0	——

ALTONA. (Prof. Schumacher.)

	M.T. h m s	R.A. ° ′ ″	N.P.D. ° ′ ″	
May 28	11 25 8	226 28 17·4	99 52 1·9	Equatoreal.
June 1	10 22 41	225 41 6·1	46 55·0	Mer. Circle.
2	18 1	29 58·6	.....	——
3	10 13 22	225 19 6·0	99 45 8·7	——

BERLIN. (Prof. Encke.)

	Berlin M.T. h m s	R.A. ° ′ ″	N.P.D. ° ′ ″	
May 25	11 12 8·0	227 6 42·2	99 57 16·5	Equatoreal.
27	10 20 26·2	226 41 28·0	99 53 40·4	— .

Elements.

From the observations of May 12 and 28 Mr. Weyer has calculated the following *circular* elements, which are stated by Prof. Schumacher to represent the observations during May with great accuracy :—

Longitude, May 12·4773, Mean Berlin Time = 231° 1′ 31″·8, M. Eq. 1850

	° ′ ″
Ascending Node	128 57 42·7
Inclination	4 29 52·1
Log. radius of Orbit	0·376901
Log. diurnal Motion in seconds...	2·984655

Sidereal Period 1343 days.

Elliptic. By M. George Rümker.

Perihelion Passage, 1851, Feb. 15·663509 Mean Greenwich Time.

	° ′ ″	
Longitude Perihelion	315 33 25·2	Mean Equinox,
— Ascending Node	125 39 4·2	1850, Jan. 1.
Inclination	4 33 8·2	
φ	5 54 41	
e	0·1030387	
Log. semi-axis Major	0·38472636	
Sidereal Revolution	1379·39 days.	

IRIS.

LIVERPOOL. Equatoreal. (Mr. Hartnup.)

1850.	Greenwich M.T.	R.A.	N.P.D.	Comp^{d}—Obs^{d}. R.A.	Comp^{d}—Obs^{d}. N.P.D.	Star of Comparison.
	h m s	h m s	° ′ ″	s	″	
May 9	12 24 0·0	15 39 52·53	113 9 31·1	+0·12	+0·5	42 Libræ.
12	12 32 41·9	15 36 52·72	112 56 10·0	+0·22	+0·7	—
14	12 20 20·2	15 34 52·36	112 46 59·2	+0·23	−1·7	—
June 2	10 38 24·5	15 16 35·66	111 11 8·2	+0·09	−0·1	—

The observations are corrected for refraction and parallax.

The computed places were deduced from the Supplement to the *Nautical Almanac* for 1853.

The following assumed place of the star of comparison is derived from the Greenwich Twelve-year Catalogue:—

For Jan. 1, 1850.

	Mean R.A.	Mean N.P.D.
42 Libræ	$15^{h}\,31^{m}\,25^{s}\cdot37$	$113^{\circ}\,19'\,33''\cdot29$

HYGEIA.

CAMBRIDGE. Northumberland Equatoreal. (Prof. Challis.)

1850.	Greenwich M.T.	R.A.	N.P.D.	No. of Comps. R.A.	No. of Comps. N.P.D.	Star.
	h m s	h m s	° ′ ″			
May 15	13 58 2·6	19 44 35·33	112 12 54·6	1	1	*a*
	14 10 56·9	35·04	54·0	1	1	*b*
28	14 38 4·6	43 58·69	112 3 36·7	10	10	*c*
June 7	12 33 37·0	19 40 44·36	112 1 57·1	3	3	*a*
	12 50 56·6	44·24	55·9	6	3	*c*

Not corrected for parallax.

Assumed Mean Places of the Stars, 1850·0.

	R.A.	N.P.D.	Authority.
	h m s	° ′ ″	
a	19 30 59·71	112 23 52·1	H.C. 37221
b	19 38 48·41	112 41 3·6	Not in catalogues.
c	19 41 27·85	112 0 42·6	—

The places of the stars *b* and *c* were determined by three equatoreal comparisons with H.C. 37221, and are somewhat uncertain.

JUNO.

LIVERPOOL. Equatoreal. (Mr. Hartnup.)

1850.	Greenwich M.T.	R.A.	N.P.D.	Comp^{d}—Obs^{d}. R.A.	Comp^{d}—Obs^{d}. N.P.D.	Stars of Comparison.
	h m s	h m s	° ′ ″	s	″	
April 30	12 29 9·2	13 4 29·11	86 30 8·4	+2·64	+13·5	8 Virginis.
May 1	9 23 50·5	3 56·77	26 0·6	+2·77	+13·5	—
5	11 8 43·4	13 0 35·46	86 8 25·1	+2·63	+12·4	—

The observations are corrected for refraction and parallax.

The following assumed place of the star of comparison has been obtained from the Greenwich Twelve-year Catalogue :—

For Jan. 1, 1850·0.

	Mean R.A.	Mean N.P.D.
δ Virginis	$12^h\ 48^m\ 2^s{\cdot}90$	$85°\ 47'\ 11''{\cdot}67$

PETERSEN'S THIRD COMET.

Observations.

CAMBRIDGE. Northumberland Equatoreal. (Prof. Challis.)

1850.	Greenwich M.T.	R.A.	N.P.D.	No. of Comp.	Star.
	o ′ ″	h m s	o ′ ″		
May 9	12 10 49·6	19 13 30·09	17 30 43·0	4	*a*
	13 8 2·7	26·08	17 30 20·5	4	*a*
11	11 16 3·3	19 9 3·16	17 12 22·6	6	*b*
15	12 54 38·2	18 57 21·36	16 37 21·4	4	*b*
20	10 54 16·4	38 15·71	16 3 3·8	6	*c*
22	11 54 58·4	18 28 24·59	15 52 31·5	7	*d*
29	11 24 35·1	17 47 39·36	15 46 44·9	1	*e*
June 3	11 41 54·8	17 11 45·38	16 22 3·0	2	*f*
		On the Meridian.			
June 3	12 22 46·2	17 11 31·85	16 22 30·9		
7	11 36 58·4	16 41 22·85	17 24 49·4		
8	11 25 29·4	16 33 48·46	17 46 5·0		

The observations are not corrected for parallax. The first set of comparisons on May 9 was taken by oblique transits at bars inclined alternately $+45°$ and $-45°$ to the parallel of declination; the differences of north polar distance in the other set are micrometer measures.

Assumed Mean Places of the Stars 1850·0.

	R.A.	N.P.D.	Authority.
	h m s	o ′ ″	
a	19 20 32·55	17 32 50·7	Argelander Z. 31 No. 51
b	19 6 28·62	16 51 20·7	—— 31 No. 38
c	18 31 43·97	16 20 22·3	—— 31 No. 1
d	18 27 20·60	15 55 12·0	—— 124 No. 162
e	17 42 14·10	15 33 23·3	—— 122 No. 120
f	17 16 23·62	17 2 19·7	—— 124 No. 69

DURHAM.

	Greenwich M.T.	R.A.		N.P.D.		Set.
	h m s	h m s		o ′ ″		
May 9	12 54 35·4	19 13 25·1	$-0{\cdot}096\,p$	17 29 51	$+0{\cdot}119\,p$	(1)
12	10 52 40·0	19 6 36·56	$0{\cdot}127\,p$	17 3 17·3	$-0{\cdot}093\,p$	(2)
	11 31 15·5	19 6 33·75	$0{\cdot}119\,p$	17 3 7·6	$-0{\cdot}006\,p$	(3)
14	13 26 24·1	19 0 33·56	$0{\cdot}072\,p$	.....		(4)
	13 26 10·4	19 0 34·72	$0{\cdot}072\,p$	16 45 1·9	$+0{\cdot}231\,p$	(5)
15	11 53 12·5	18 57 35·16	$0{\cdot}109\,p$	16 37 30·7	$+0{\cdot}091\,p$	(6)
29	12 46 26·4	17 47 17·00	$-0{\cdot}026\,p$	15 46 35·1	$+0{\cdot}328\,p$	(7)

Stars of Comparison.	Assumed Apparent Places. R.A.	N.P.D.	No. of Diffs. taken. In R.A.	In N.P.D.	Set.
	h m s	° ′ ″			
Argelander, Zone 31, No. 51	19 20 35·22	17 33 1·0	3	1	(1)
—— No. 38	19 6 31·91	16 51 29·1	8	5	(2)
τ Draconis	19 18 27·86	16 55 40·5	7	2	(3)
Argelander, Zone 31, No. 38	19 6 32·01	.....	6	0	(4)
τ Draconis	19 18 27·98	16 55 40·1	7	2	(5)
Argelander, Zone 31, No. 38	19 6 32·09	16 51 28·4	10	3	(6)
—— 126, No. 97	17 40 11·31	15 54 35·3	11	4	(7)

LIVERPOOL. Equatoreal. (Mr. Hartnup.)

Greenwich M.T.	R.A.	Log $\frac{p}{P}$	N.P.D.	Log $\frac{q}{P}$	Star of Comp.
h m s	h m s		° ′ ″		
May 8 12 34 20·4	19 15 29·17	−9·0404	17 39 58·4	+8·8421	σ Draconis
9 10 55 45·0	13 36·91	−9·1150	31 10·1	−9·1510	— —
12 10 59 53·5	6 32·10	−9·1163	17 3 16·2	−8·8996	τ Draconis
14 13 3 26·6	19 0 24·49	−8·7623	16 44 51·5	+9·4611	— —
21 11 20 23·7	18 33 33·44	−9·1266	15 57 40·8	+9·0572	B.A.C. 6469–6514
28 12 15 5·3	17 53 58·22	−8·7305	44 21·0	+9·5024	B.A.C. 6001
29 11 20 55·8	47 38·03	−8·8897	15 46 43·9	+9·4194	— —
June 2 12 45 41·8	18 57·07	+6·7585	16 12 0·0	+9·5402	— —
3 13 32 43·0	17 11 15·25	+8·5200	16 23 12·9	+9·5144	— —
17 12 31 42·5	15 29 15·07	+8·7995	23 9 7·5	+9·0614	B.A.C. 5406
— 13 31 19·7	0·31	+8·9099	11 16·5	+8·0684	— —

The mean places for 1850·0 of the comparison stars are assumed as follows:—

	R.A.	N.P.D.	
	h m s	° ′ ″	
σ Draconis	19 32 38·52	20 35 37·8	Greenwich Twelve-Year Catalogue
τ Draconis	19 18 24·38	16 55 27·7	Oxford Observations.
B.A.C. 6469	18 49 29·46	16 5 23·6	— —
—— 6514	18 56 43·02	16 6 46·6	— —
—— 6001	17 36 50·67	15 40 57·9	— —
—— 5406	16 5 55·92	21 47 39·6	Greenwich Twelve-Year Catalogue

STONE.* On the Meridian. (Rev. J. B. Reade, and Mons. V. Fasel.)

1850.	Approx. N.P.D.	R.A.	1850.	Approx. N.P.D.	R.A.
	° ′	h m s		° ′	h m s
June 2	16 12	17 18 56·76	June 12	19 27	16 4 2·77
3	16 20	17 11 38·47	13	20 7	15 56 52·93
4	16 29	17 4 10·46	15	21 30	15 43 4·34
7	17 3	16 41 22·35	16	22 18	15 36 22·55
8	17 18	16 33 44·38	17	23 6	15 29 58·50
9	17 51	16 26 21·90			

* Latitude 51° 47′ 57″ North.
Longitude 3ᵐ 29ˢ·09 West.

These observations are corrected for instrumental errors. The system of wires in the Stone transit consists of the usual fine webs, and an intermediate set of wires of about $\frac{1}{400}$th of an inch in diameter. The latter are visible on a darkened field when the former cannot be seen. The comet being a very faint object, could only be observed on the thicker wires with the field darkened. The N.P.D. is the reading of the small circle attached to the transit.

Haverhill. (Mr. W. W. Boreham.)

1850. Greenwich M.T.	R.A.		N.P.D.		Stars of Comparison.
	h m s		o ′ ″		
May 11	10 8 42	19 9 3·29 −*p* 0·139	17 12 53·3 −*p* 0·17		Arg. Z. 31, No. 38.
18	11 14 20	18 46 32·72 0·122	16 13 49·4 +*p* 0·107		Groomb. 2710, Radcliffe Obs.
20	10 28 28	18 38 12·92 0·133	16 3 24·5 0·048		Arg. Z. 122, No. 198.
26	10 50 30	18 6 44·65 0·029	15 43 11·9 0·208		Arg. Z. 122, No. 155.
28	10 34 27	17 54 20·13 0·107	15 44 7·8 0·215		H. Cél. 33239, and 33244, mean taken.
30	10 20 44	17 41 4·94 0·099	15 50 19·2 0·226		Arg. Z. 126, No. 97.
June 1	10 47 36	17 26 53·02 0·074	16 3 21·1 0·292		α and β.*
2	10 46 23	17 19 32·62 0·099	16 11 52·2 0·217		Arg. Z. 126, No. 72.
3	10 48 47	17 12 3·62 0·059	16 21 47·7 0·317		Groomb. 2420, Radcliffe Obs.
4	10 49 0	17 4 38·88 −*p* 0·051	16 34 10·3 0·325		—
8	12 1 19·6	16 33 34·77 +*p* 0·02	17 46 43·4 0·338		Arg. Z. 126, No. 15.
11	11 40 46·6	16 11 2·70 0·026	19 9 27·15 0·306		— 115, No. 154.
13	11 22 0·6	15 56 39·63 0·026	20 13 27·49 0·283		— 116, No. 132.
15	11 40 19·5	15 42 38·74 0·044	21 33 42·4 0·232		Groomb. 2263, Radcliffe Obs.
16	11 4 2·6	15 36 10·33 +*p* 0·028	22 16 57·39 +*p* 0·149		Arg. Z. 116, No. 114.

* β = Arg. Z. 126, No. 72 Comet follows α 2 m 54·0 Comet south of α 7 ′ 43·2 ″

α follows β 2 56·4 α south of β 12 57·4

p = Hor. Eq. Parallax of Comet in seconds, time and arc, respectively.

Altona. (Dr. Petersen and M. R. Schumacher.)

	Altona M.T. h m s	R.A. o ′ ″	Decl. o ′ ″
May 2	9 48 22·4	291 2 38·4	+71 19 4·8
	12 12 8·3	0 19·8 :	55·8
	13 37 7·8	34·8	.....
3	9 52 25·3	.....	71 28 50·7
	10 15 47·3	290 46 41·7	.....
	11 48 37	46 45·3	29 42·7
4	12 54 43	290 26 18·5	71 40 4·0
7	10 46 55·9	289 21 3·2	72 9 14·8
8	10 26 43·0	288 54 54·6	18 42·2
12	10 27 47·2	.....	72 56 11·8
	10 32 58·7	286 39 3·9	.....
13	11 13 50·4	285 56 32·0	73 5 13·3
25	13 59 1·6	273 1 28·4	74 16 2·1
26	13 49 17	271 34 0·3	+74 16 54·8

BERLIN. (Prof. Encke.)

	Berlin M.T. h m s	R.A. ° ′ ″	Decl. ° ′ ″
May 5	10 42 56·4	290 9 44·4	+71 49 12·2

KÖNIGSBERG. (Dr. Wichmann.)

	Königsberg M.T. h m s	R.A. ° ′ ″	Decl. ° ′ ″
May 13	10 53 36	285 58 36·2	+73 5 5·2

PARIS.

	Paris M.T. h m s	R.A. ° ′ ″	Decl. ° ′ ″
May 10	11 7 18	287 50 30	+72 38 17·1
12	12 33 56	286 33 24·0	+72 57 26·6

HAMBURG. (M. C. Rümker.)

	Hamburgh M.T. h m s	R.A. ° ′ ″	Dec. ° ′ ″
May 2	10 20 36·0	291 2 15·0	+71 18 55·8
3	10 37 3·7	290 47 30·5	29 13·9
4	12 15 48·9	290 28 25·2	71 40 13·6
7	10 56 17·4	289 20 28·2	72 9 12·0
8	10 13 50·8	288 55 29·8	18 43·6
10	11 35 16·3	287 53 8·3	38 46·8
12	11 36 48·1	286 38 13·0	72 56 38·3
13	11 47 25·1	285 56 13·2	73 5 14·0
14	13 27 48·9	285 8 36·2	14 27·3
15	10 54 0·9	284 26 20·3	21 45·3
18	11 36 0·4	281 40 49·2	44 30·3
19	12 23 13·0	280 36 54·0	51 3·2
20	13 7 23·0	279 29 49·1	73 57 15·5
23	12 19 21·6	275 52 39·3	74 10 37·0
25	11 14 0·7	273 11 14·3	+74 15 35·4

Elements.

I. By Mr. Richard Schumacher, from the *Altona Observations* of May 3d, 8th, and 13th.

Perihelion passage 1850, July 23, 10759 Berlin M.T.

	° ′ ″	
π	273 16 19·9	App^{t}. Eq. May 1.
Ω	92 47 11·8	
i	68 6 38·6	
Log q ...	0·0334850	

Motion direct.

From these elements the following ephemeris has been computed :—

Ephemeris for 12h M.T. at Berlin, by Mr. R. Schumacher.

1850.	Appt. R.A.	Hourly Var. in R.A.	Appt. Decl.	Hourly Var. in Decl.	Log. Δ
	° ′ ″	′ ″	° ′ ″	″	
May 2·5	291 1 7·3	−0 36·9	+71 19 40·8	+25·2	0·17882
3·5	290 45 19·9	42·1	29 45·4	25·2	0·17468
4·5	290 27 25·9	47·5	39 48·0	25·1	0·17048
5·5	290 7 19·3	53·1	49 47·6	24·9	0·16619
6·5	289 44 54·7	−0 59·0	+71 59 43·2	24·7	0·16183
7·5	289 20 7·2	−1 5·1	+72 9 33·5	24·5	0·15739
8·5	288 52 49·1	11·5	19 17·3	24·2	0·15287
9·5	288 22 54·8	18·1	28 53·4	23·8	0·14827
10·5	287 50 17·3	25·0	38 20·5	23·4	0·14357
11·5	287 14 50·9	32·2	47 36·6	+22·9	0·13880
12·5	286 36 28·0	39·7	+72 56 39·8	22·3	0·13394
13·5	285 55 2·3	47·5	+73 5 28·7	21·7	0·12898
14·5	285 10 27·6	−1 55·5	14 0·6	21·0	0·12395
15·5	284 22 36·9	−2 3·8	22 13·7	20·1	0·11881
16·5	283 31 24·6	12·3	30 5·0	19·1	0·11357
17·5	282 36 43·7	21·1	37 32·0	18·1	0·10823
18·5	281 38 29·8	30·1	44 31·8	16·9	0·10279
19·5	280 36 36·6	39·3	51 1·2	15·5	0·09724
20·5	279 31 0·8	48·7	+73 56 56·7	14·0	0·09159
21·5	278 21 38·2	−2 58·2	+74 2 14·9	+12·4	0·08582
22·5	277 8 26·3	−3 7·8	6 51·6	10·6	0·07995
23·5	275 51 24·0	17·4	10 42·8	8·6	0·07396
24·5	274 30 30·5	27·0	13 43·5	6·4	0·06785
25·5	273 5 47·8	36·5	15 49·3	4·0	0·06162
26·5	271 37 19·2	45·8	16 54·8	+ 1·4	0·05528
27·5	270 5 10·7	54·9	16 54·9	− 1·4	0·04880
28·5	268 29 29·0	−4 3·5	15 43·7	4·5	0·04219
29·5	266 50 24·4	−4 11·7	+74 13 15·1	− 7·9	0·03546

The horary movement is for Berlin Midnight.

Comparison of the Observations with Mr. R. Schumacher's Ephemeris.

	M.T. at place.	R.A.	Parall.	North Decl.	Parall.	Errors of Ephem. Δα cos δ	Errors of Ephem. Δδ
	h m s	° ′ ″	″	° ′ ″	″	″	″
2 Altona	9 48 22·4	291 2 38·4	−10·3	71 19 4·8	+2·2	+ 0·4	+20·9
Hamburg	10 20 36	2 15	10·5	18 55·2	+1·8	− 0·9	− 2·6
Altona	12 12 8·3	0 19·8	9·8	19 55·8	+0·2	−15·7	+ 9·5
—	13 37 7·8	0 34·8	7·6	....	....	+ 6·7	....
3 Altona	9 52 25·3	....	....	28 50·7	+2·1	....	+ 0·3
—	10 15 47·3	290 46 41·7	10·7	....	....	− 0·2	....
Hamburg	10 37 3·7	47 30·5	10·8	29 13·9	+1·5	+20·0	+ 4·3
Altona S.	11 48 37	46 45·3	10·3	29 42·7	+0·5	+21·7	+ 1·9

1850. May		M.T. at place. h m s	R.A. ° ′ ″	Parall. ″	North Decl. ° ′ ″	Parall. ″	Errors of Ephem. Δ α cos δ ″	Δ δ ″
4	Hamburg	12 15 48·9	290 28 25·2	9·9	71 40 13·6	+0·0	+20·0	+18·4
	Altona S.	12 54 43	26 18·5	7·2	40 4·0	−0·4	− 9·3	− 8·0
5	Berlin	10 42 56·4	9 44·4	11·4	49 12·2	+1·2	+17·2	+ 2·8
7	Altona	10 46 55·9	289 21 3·2	11·5	72 9 14·8	+1·0	− 9·9	+11·3
	Hamburg	10 56 17·0	20 28·2	11·4	9 12·0	+0·9	−17·6	+ 4·6
8	—	10 13 50·8	288 55 29·8	11·8	18 43·6	+1·4	+ 7·7	+ 9·7
	Altona	10 26 43·0	54 54·6	11·8	18 42·2	+1·2	+ 1·6	+ 2·9
	Liverpool	12 34 20·4	52 17·6	9·9	20 1·6	+0·4	+15·1	+13·9
9	—	10 55 45·0	24 13·7	11·9	28 49·9	−0·9	+11·5	+ 4·4
10	Hamburg	11 35 16·3	287 53 8·3	11·2	38 46·8	0·0	+38·1	+35·1
	Paris	11 7 18	50 30	13·0	38 17·1	+0·2	− 8·5	+ 4·6
11	Haverhill	10 8 42	15 49·5	12·9	47 6·7	+1·1	−17·8	− 2·4
12	Altona	10 27 47·2	....	....	56 11·8	+0·8	....	+ 6·1
	—	10 32 58·7	286 39 3·9	12·5	....	....	+ 1·1	....
	Hamburg	11 36 48·1	38 13·0	11·3	56 38·3	−0·2	+17·5	+ 6·0
	London	10 57 35	38 36·8	12·8	56 35·7	+0·3	+24·3	+ 3·6
	Liverpool	10 59 53·5	38 1·5	12·4	56 43·8	+0·5	+15·2	+11·1
	Paris	12 33 56	33 24·0	10·5	57 26·6	−1·3	−24·4	+20·6
13	Königsberg	10 53 36	285 58 36·2	12·0	73 5 5·2	+0·4	+ 3·7	+15·2
	Altona	11 13 50·4	56 32·0	11·9	5 13·3	0·0	+ 0·1	+ 0·2
	Hamburg	11 47 25·1	56 13·2	11·0	5 14·0	−0·5	+12·2	−11·5
14	—	13 27 48·9	8 36·2	6·8	14 27·3	−1·7	+16·3	− 6·7
	Durham	13 20 54·8	8 40·2	7·3	14 57·4	−1·4	+35·7	+12·2
	Liverpool	14 3 26·6	6 7·4	5·6	15 8·5	−1·9	+15·9	+ 7·9
15	London	9 27 3	284 27 37·4	14·2	21 26·7	+1·4	+17·1	− 8·6
	Hamburg	10 54 0·9	26 20·3	12·5	21 45·3	+0·1	+23·2	− 7·1
18	—	11 36 0·4	281 40 49·2	11·3	44 30·3	−0·9	+21·7	+ 3·4
	Haverhill	11 16 31	38 10·8	12·3	46 10·5	−0·8	− 9·0	+98·0
19	London	9 53 45	280 41 34	14·9	50 42	+0·4	+17·4	+ 2·7
	Hamburg	12 23 13·0	36 54·0	9·0	51 3·2	−1·6	+22·0	− 6·5
20	London	10 36 23	279 34 57	13·9	56 48	−0·4	+30·3	+ 0·3
	Hamburg	13 7 23·0	29 49·1	6·2	57 15·5	−2·1	+33·7	+ 0·2
21	Liverpool	11 20 23·7	278 23 21·5	14·2	74 2 19·0	−0·8	+27·8	+ 2·5
23	London	11 26 31	275 53 7·2	11·3	10 43·7	−1·6	+34·3	− 2·2
	Hamburg	12 19 21·6	52 39·3	7·7	10 36·9	−2·0	+39·3	−11·2
25	—	11 14 0·7	273 11 14·3	10·8	15 35·4	−1·6	+40·7	−12·4
	Altona S.	13 59 1·6	1 28·4	0·0	16 2·1	−2·6	+50·7	− 2·3
26	—	13 49 17	271 34 0·3	−0·0	16 54·8	−2·6	+62·3	− 5·0

The M.T. of observation is the M.T. of the place, except the English observations, where it is Mean Greenwich Time.

The *London* observations are those made at *South Villa* by MM. Bishop and Hind.

The column for Aberration is given by Mr. Schumacher, but is omitted here for want of room : it can easily be supplied from the ephemeris.

II. By Mr. N. Pogson, from observations on May 2, 9, and 15.

Perihelion Passage, 1850, July 23·36194, G.M.T.

	° ′ ″	
π	273 20 11·4	Mean Eq. May 0.
Ω	92 55 6·1	
i	68 9 16·3	
Log. q	0·034241	

Motion direct.

III. By Mr. James Breen, Senior Assistant at the Cambridge Observatory. *From the Cambridge Observations* of May 11, 15, and 20.

Perihelion Passage July 22·690403 Greenwich M.T.

	° ′ ″	
Longitude of Perihelion	273 11 57·43	Mean Eq. 1850, Jan. 1.
Longitude of Asc. Node	92 46 41·88	
Inclination	68 0 40·20	
Log. least distance	0·0330542	

Motion direct.

For the middle observation these elements give,

	Comp^{d} — Obs^{d}
Δ R.A. sin N.P.D.	= +2″·17
Δ N.P.D.	= −0·40

EPHEMERIS OF PETERSEN'S COMET.

Extract of a Letter from Professor Schumacher to the President.

"From a consideration of the elements of this comet, as computed by M. Goetze and himself, M. Sonntag finds that it can probably be observed at the Cape, far into and perhaps through the month of September. He has calculated an *approximate* ephemeris, which is, however, sufficiently accurate for finding the comet. This I enclose, and beg that you will forward it as early as possible to Mr. Maclear. The ephemeris only reaches to August 22d, but Mr. Maclear will have no difficulty in continuing it with the co-ordinates which I have already sent you. M. Sonntag intends to extend the ephemeris, when a greater amplitude of observed arc has enabled him to obtain elements still more accurate. It is very desirable this comet should be observed after its perihelion passage. M. Gauss is even of opinion that it is not *proved* that a *comet* must, after having passed the perihelion, move in the same orbit as before."

Ephemeris of Petersen's Comet, calculated by M. Sonntag for Mean Greenwich Noon.

1850.	R.A.	Dec.	Log Δ.	1850.	R.A.	Dec.	Log Δ.
	° ′	° ′			° ′	° ′	
July 1	215 35	+48 51	9·7485	July 28	200 27	−20 26	
2	214 41	46 52		29	200 7	22 28	9·7527
3	213 49	44 48	9·7296	30	199 48	24 25	
4	212 59	42 38		31	199 30	26 16	9·7728
5	212 11	40 23	9·7121	Aug. 1	199 12	28 2	
6	211 25	38 1		2	198 55	29 44	9·7932
7	210 42	35 33	9·6996	3	198 39	31 21	
8	210 0	33 0		4	198 23	32 54	9·8137
9	209 20	30 22	9·6838	5	198 7	34 22	
10	208 41	27 40		6	197 52	35 47	9·8341
11	208 4	24 53	9·6743	7	197 37	37 7	
12	207 28	22 3		8	197 23	38 24	9·8541
13	206 54	19 10	9·6685	9	197 10	39 38	
14	206 21	16 16		10	196 57	40 49	9·8737
15	205 50	13 21	9·6668	11	196 45	41 57	
16	205 19	10 25		12	196 34	43 3	9·8928
17	204 50	7 31	9·6694	13	196 23	44 6	
18	204 22	4 38		14	196 12	45 6	9·9113
19	203 55	+ 1 48	9·6760	15	196 2	46 4	
20	203 29	− 0 59		16	195 52	47 0	9·9293
21	203 3	3 42	9·6863	17	195 42	47 54	
22	202 39	6 21		18	195 33	48 46	9·9466
23	202 15	8 56	9·6997	19	195 24	49 36	
24	201 52	11 25		20	195 16	50 25	9·9632
25	201 29	13 49	9·7157	21	195 8	51 12	
26	201 8	16 7		22	195 0	−51 58	9·9788
27	200 47	−18 19	9·7335				

Opposition of Mars in 1849–1850, *observed at the Cape of Good Hope.* By Mr. Maclear.

Date.	Name or No.	Cape Sid. T.	Excess of N. Declin. of Mars above N. Declin. of Star.	No. of Obs.
1849.		h m s	′ ″	
Nov. 21	B. A. C. 2058	5 47 45·74	+10 3·402	4
	ε Geminor.	7 47 45·74	+ 0 53·618	4
22	— —	7 13 0·94	+ 4 32·122	4
24	H. C. 11854	6 32 8·96	+ 5 21·681	4
25	H. C. 11946?	6 18 31·45	− 1 12·965	6
	Anon.	6 18 31·45	− 3 53·786	6
26	H. C. 11946?	6 53 40·72	+ 2 17·962	6

Date.	Name or No.	Cape Sid. T.	Excess of N. Declin. of Mars above N. Declin. of Star.	No. of Obs.
1849.		h m s	′ ″	
27	H. C. 12336	6 4 18·30	− 4 38·208	14
28	— —	6 2 15·44	− 1 16·731	12
29	— —	6 55 30·81	+ 2 10·416	6
30	— —	5 28 15·58	+ 5 14·640	4
Dec. 1	H. C. 12395	6 2 55·97	+ 4 22·948	5
2	— —	7 25 1·93	+ 7 42·381	6
3	H. C. 11684	6 3 29·66	− 5 4·452	6
4	— —	6 1 40·38	− 2 5·716	8
5	— —	5 52 5·85	+ 0 45·449	10
6	— —	6 9 45·87	+ 3 33·647	20
7	— —	5 48 18·48	+ 6 12·940	20
8	— —	6 13 26·43	+ 8 45·818	20
9	— —	6 24 47·88	+ 11 12·278	3
	139 Tauri	6 21 37·20	+ 17 40·419	4
10	H. C. 11108	7 32 9·79	− 7 12·520	8
11	— —	6 24 39·74	− 5 11·326	3
14	— —	5 52 25·34	+ 0 17·831	10
15	— —	5 32 6·06	+ 1 47·944	10
16	— —	5 28 35·44	+ 3 11·830	10
	— —	6 16 21·04	+ 3 13·036	20
17	— —	6 26 8·30	+ 4 25·652	20
18	— —	6 12 18·28	+ 5 28·507	20
20	H. C. 10669	5 49 10·66	− 1 46·719	8
21	— —	6 34 13·76	− 1 10·850	8
22	— —	6 15 1·00	− 0 44·108	8
23	— —	5 29 48·99	− 0 25·759	2
24	— —	6 32 20·22	− 0 15·999	6
25	— —	5 8 26·05	− 0 14·143	10
	— —	5 38 42·35	− 0 14·649	10
26	— —	4 47 2·67	− 0 19·658	10
	Anon.	5 34 9·63	− 0 5·387	10
29	H. C. 10669	5 27 13·31	− 1 16·513	5
1850.				
Jan. 7	B. A. C. 1562	5 44 46·65	+ 10 18·894	4
8	— —	5 59 5·12	+ 9 16·948	4
9	— —	5 13 4·80	+ 8 14·124	4
10	— —	5 18 14·70	+ 7 11·623	4
11	— —	5 36 18·51	+ 6 6·234	4
12	— —	5 45 44·58	+ 5 0·751	4
14	— —	5 33 37·05	+ 2 54·742	6
15	— —	5 9 40·33	− 1 52·874	6
16	— —	5 42 26·16	− 0 51·640	6
17	— —	5 13 34·02	− 0 5·839	7

The observations from which the foregoing results are deduced were made with the equatoreal instrument by Merz, of Munich, lately erected at the Cape Observatory, the telescope of which is about $8\frac{1}{2}$ feet focal length. The differences of declination are measured by the micrometer.

All the details are given by Mr. Maclear; but as the especial object of the communication is to determine the parallax of *Mars*, in co-operation with observatories in the northern hemisphere, it has been thought sufficient to publish here what is required for correcting the tables of *Mars*.

Occultation of Jupiter by the Moon (1850, *May* 19), *observed at the Collegio Romano, Rome.* By Professor Secchi.

	Immersion. Sid. Time.	Emersion. Sid. Time.
	h m s	h m s
3d Satellite	11 42 51·59	....
2d —	42 55·69	....
1st Limb Jupiter	43 12·69	12 39 31·29
2d — —	45 18·49	41 16·89
1st Satellite	47 27·99	45 13·39
4th —	12 3 32·49	13 1 52·99

Observed by two observers with a Fraunhofer, 75^{mm} aperture, power 70, and a Dollond, 46^{mm} aperture, power 40.

Both observers agreed in the moments of immersion, which was very well seen. The outline of *Jupiter* remained perfectly round till the segment was very much reduced; the cusps then appeared enlarged, probably from the effect of irradiation.

The emersions are not so accordant. The weaker telescope showed the planet first. The assistant made some mistake about the minute in one instance. Altogether the moments of emersion are less trustworthy.

Measures of γ *Draconis.* By Mr. Fletcher.

The following values are the mean result of all the observations taken by Mr. Fletcher in the spring of 1850.*

Position 176° 38′ Distance 2″·953 Epoch 1850·337

Capt. Shea has completed his drawings of spots on the sun up to June 13 (see *Monthly Notices*, vol. ix. p. 140 and 218; these are contained in the book presented to the Society), and also forwarded a sketch of the configuration of the moon, *Jupiter*, and *Regulus*, on the 19th May, 1850.

* For a description of Mr. Fletcher's equatoreal and observatory, see *Monthly Notices*, vol. x. p. 137.

ERRATA.

In "Description of Mr. Fletcher's Observatory," p. 138, line 32, *for* $1\frac{1}{2}$-inch pine boarding, *read* $\frac{1}{2}$-inch pine boarding.

Page 142, line 13 from bottom, *for* + 17°, *read* + 71°.

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